6. FLAT BED IMAGE SCANNING SECTION

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6. Flat Bed Image Scanning Section

[Adjustment]

1. Sensitivity of Original IN Sensor

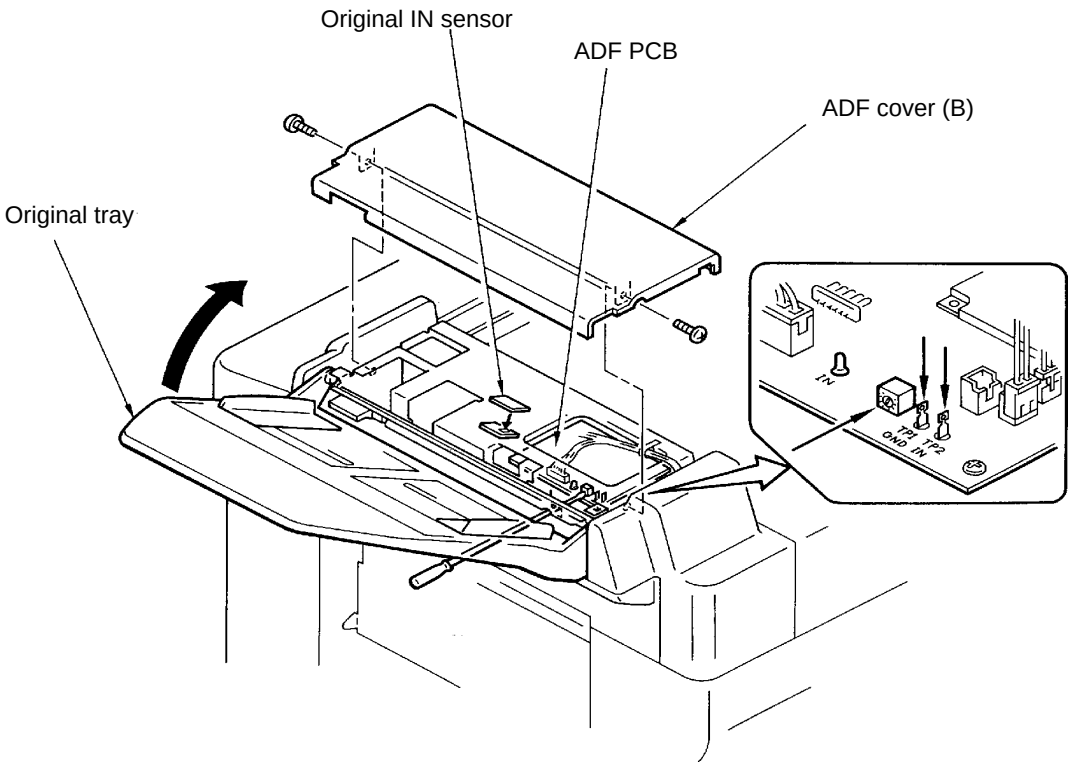
1. Turn OFF the power and remove the ADF Cover (B).
2. Connect a voltage meter between **TP1 (IN)** and **TP(2) (GND)** on the ADF PCB.
3. Turn ON the power and place a white sheet of paper in the light path of the Original IN sensor. The voltage should read **1.0±0.2** volts with a sheet of paper, and more than **3.0 volts** without (the light path of the Original IN Sensor not blocked).
4. If the above voltages are not obtained, adjust the sensitivity of the sensor by turning **VR1** on the ADF PCB.
   [Note]
   Turn the VR1 clockwise to increase the sensitivity of the sensor (the voltage increases).
   The counterclockwise rotation will decrease the sensitivity (the voltage decreases).

- Check -

- Check the LED "**IN**" on the ADF PCB.
  Confirm that it illuminates when the light path of the Original IN sensor is blocked (a sheet of paper is inserted), and goes out when the sensor's light path is open (a sheet of paper is not inserted).

- Result of Misadjustment -

- If the sensitivity of the sensor is too high;
  The Original IN sensor cannot detect the original fed to the Image scanner even if the original is actually fed, and it is determined that the original has jammed before the Image scanner.
  As a result, the original jam error code **[E 37]** will be displayed.
- If the sensitivity of the sensor is too low;
  It is determined that an original has already jammed before master making and the original jam error code **[E 37]** will be displayed.



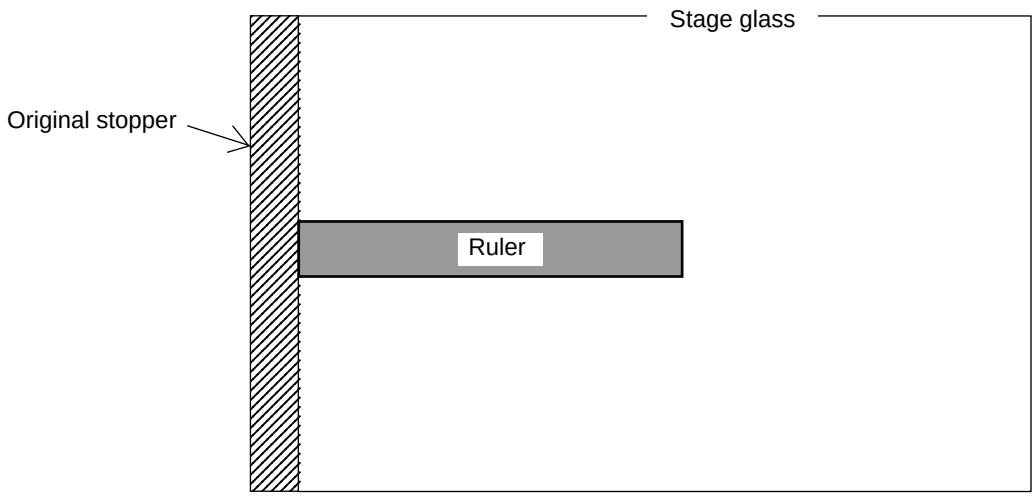
2. Scanning Start Position

(1) When Scanning on the Stage Glass (Without the Book procesing feature)

1. Place a ruler with scales engraved from the top edge on the Stage glass, against the Original stopper as shown on the sketch below, and close the Stage cover.
2. Select the PHOTO mode by LINE/PHOTO button and make a master and then print.
3. Check the print and confirm that the top **5±2mm** of the scale is erased on the print.
4. If more or less is erased, use Memory SW **No.87** (Test mode No.87) to make the correction.
5. Press the PRINT POSITION button to select a Memory switch setting referring to the chart on next page.
   For instance, if Memory switch setting number **4** needs to be selected, press the PRINT POSITION button to move the number up or down until the display shows **4 87**.
6. Press the **STOP** button and then the **ALL RESET** button to input the selected number.
   The panel display returns to an ordinary indication.

(2) When Scanning on the Stage Glass (With the Book procesing feature)

1. Erase top **2mm** of the ruler with a white correction fluid and place it on the Stage glass, against the Original stopper, and close the Stage cover.
   The **top 2mm must be erased white** to make "white margin" for this adjustment to work properly.
2. Select the PHOTO mode by LINE/PHOTO button and select BOUND BOOK CENTER mode (does not matter if it is Photo or Erase), and make a master and then print.
3. Check the print and confirm that the **5±2mm** of the ruler from its top is erased on the print.
4. If more or less is erased, use Memory SW **No.82** (Test mode No.82) to make the correction.
5. Press the PRINT POSITION button to select a Memory switch setting referring to the chart on next page.
   For instance, if Memory switch setting number **6** needs to be selected, press the PRINT POSITION button to move the number up or down until the display shows **6 82**.
6. Press the **STOP** button and then the **ALL RESET** button to input the selected number.
   The panel display returns to an ordinary indication.



(3) When using ADF Unit for the Scanning

1. Using an original with continuous image from the top (original without white margin on the top), make a master through the ADF Unit, and make a print.
2. Check the print and confirm that the top **5±2mm** of the measure is erased on the print.
3. If more or less is erased, use Memory SW **No.86** (Test mode No.86) to make the correction.
4. Press the PRINT POSITION button to select a Memory switch setting referring to the chart below.
   For instance, if Memory switch setting number **9** needs to be selected, press the PRINT POSITION button to move the number up or down until the display shows **9 86**.
5. Press the **STOP** button and then the **ALL RESET** button to input the selected number.
   The panel display returns to an ordinary indication.

- Precautions in Adjustment -

- The once-input Memory switch setting cannot be erased even if Test mode No.90 or 97 is activated or when System ROM is replaced.
- The Memory switch setting is erased when **System PCB** is replaced or when Test mode **No.98** is applied.
  In this case all other Memory switch settings will also be erased.

(1) BOUND BOOK CENTER not selected (No.87) ← REDUCE ——— INCREASE →

(2) BOUND BOOK CENTER selected (No.82) ← INCREASE ——— REDUCE →

(3) Scanning with ADF Unit (No.86) ← REDUCE ——— INCREASE →

Memory SW	9	A	B	C	D	E	F	0
Adjustment (mm)	-1.4	-1.2	-1.0	-0.8	-0.6	-0.4	-0.2	0.0

1	2	3	4	5	6	7	8
+0.2	+0.4	+0.6	+0.8	+1.0	+1.2	+1.4	+1.6

3. Image Elongation/Shrinkage Correction

- When Scanning on the Stage Glass (Flat bed read pulse motor speed adjustment).

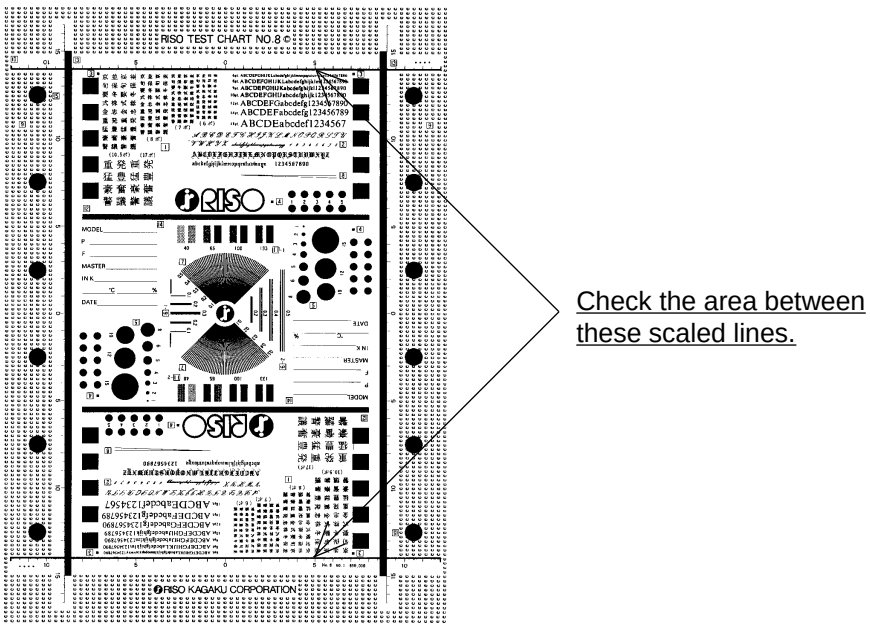
1. Make a master at **[1:1]** size using **Test chart No.8** and make prints.
2. Compare printouts with the test chart original.
   Check that the difference in image size is **within 4mm** in the area between the top and bottom scaled lines, between the printouts and the test chart original.
3. If it is elongated or shrunk **by 4mm or more**, compared to the original size, make corrections turning the Hex **(SW2)** on the **Image processing PCB**, referring to the chart on the next page.
   [IMPORTANT]
   Be sure to turn OFF the machine each time the Hex SW is turned to update the memory.

- When using ADF unit for Scanning (ADF Read pulse motor speed adjustment).

1. Make a master at **[1:1]** size using **Test chart No.8** through the ADF Unit and make prints.
2. Compare printouts with the test chart original.
   Check that the difference in image size is **within 4mm** in the area between the top and bottom scaled lines, between the printouts and the test chart original.
3. If it is elongated or shrunk **by 4mm or more**, compared to the original size, make corrections turning the **Hex (SW3)** on the **Image processing PCB**, referring to the chart on the next page.
   [IMPORTANT]
   Be sure to turn OFF the machine each time the Hex SW is turned to update the memory.

- Precautions in Adjustment -

- There may be more than one reason for elongation or shrinkage of printed image.
  Mechanical causes, i.e. backward tension on the master roll, wear of the White roller, loose screw in the pulleys, etc. should also be checked.



[Test Chart No.8]

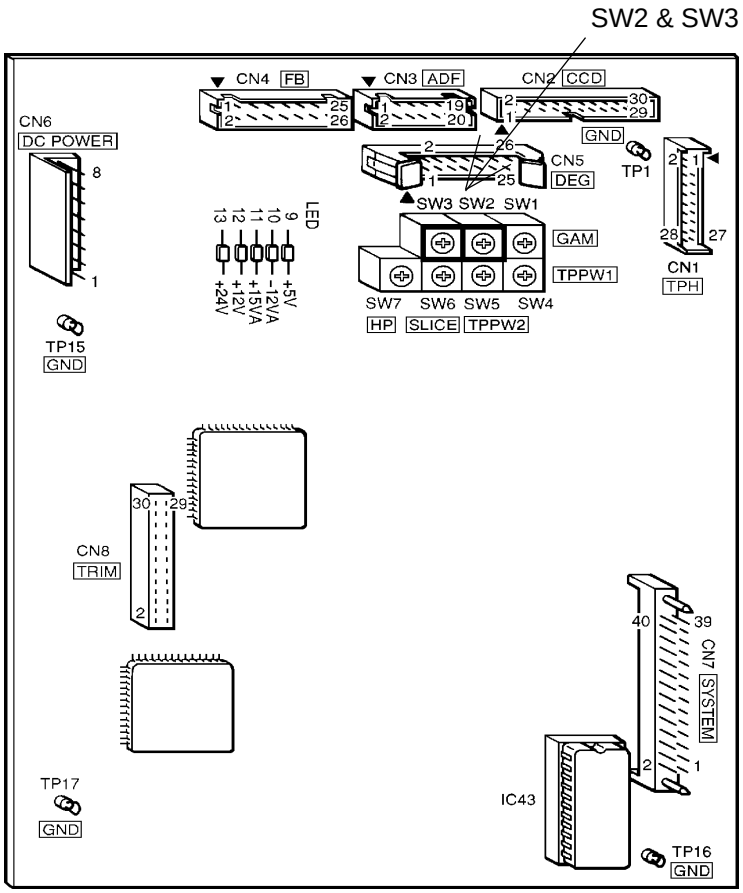
Adjustable Range Chart for the Image Elongation/Shrinkage Correction

- The adjustable range by the image elongation and shrinkage correction using the Hex Sw on the Image processing PCB on the GR series is doubled compared to the RA series.

← Elongates ——— | ——— Shrinks →

SW Setting	5	6	7	8	9	A	B	C
Adjustable Range (mm) RA Series	+3	+2	+1	0	-1	-2	-3	-4
Adjustable Range (mm) GR Series	+6	+4	+2	0	-2	-4	-6	-8

* The switch should be set at between **5~C** only.



[Image Processing PCB]

4. Horizontal Scanning Position

- When Scanning on the Stage Glass

1. Place **Test chart No.8** on the Stage Glass, against the Original stopper.
2. Make a master at **[1:1]** size and make prints.
3. Check if all "e" marks on both sides of the test chart original appear on the master on the Drum.
4. If not, adjust the horizontal scanning position by Memory SW **No.84** (Test mode No.84), referring to the chart below.
5. Press the PRINT POSITION button to select a desired Memory switch setting referring to the chart below.
   For instance, if Memory switch setting number **9** needs to be selected, press the PRINT POSITION button to move the number up or down until the display shows **9 84**.
6. Press the **STOP** button and then the **ALL RESET** button to input the selected number.
   The panel display returns to an ordinary indication.

- When using ADF Unit for Scanning

1. Make a master at **[1:1]** size using **Test chart No.8** through the ADF Unit.
2. Check if all "e" marks on both sides of the test chart original appear on the master on the Drum.
3. If not, adjust the horizontal scanning position by Memory SW **No.83** (Test mode No.83), referring to the chart below.
   (Refer to above for the operation of the Memory switch)

[IMPORTANT]

If "e" marks on both sides are missing in a large area, check the installation position of the **Paper size potentiometer** under the Paper feed tray, referring to the page I-17, and the **Master making width adjustmen**t, referring to the page VII-15.

- Precautions in Adjustment -

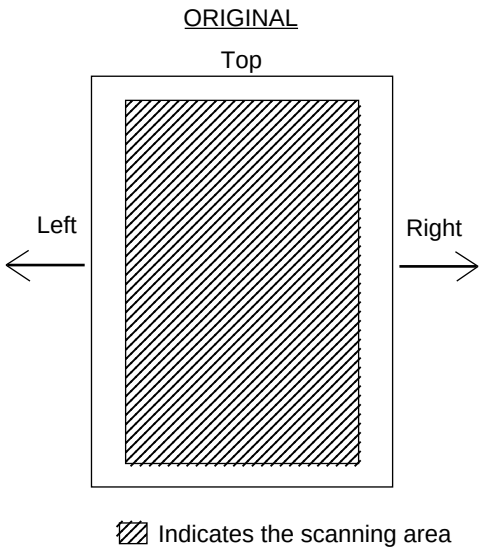
- The once-input Memory switch setting cannot be erased even if Test mode No.90 or 97 is activated or when System ROM is replaced.
- The Memory switch setting is erased when **System PCB** is replaced or when Test mode **No.98** is applied.
  In this case all other Memory switch settings which have been input will also be erased.

Memory SW No.83 & 84

Memory SW	Adjustment (mm)
9	-3.5
A	-3.0
B	-2.5
C	-2.0
D	-1.5
E	-1.0
F	-0.5
0	0
1	+0.5
2	+1.0
3	+1.5
4	+2.0
5	+2.5
6	+3.0
7	+3.5
8	+4.0

The scanning area slides to the left.

The scanning area slides to the right.



5. Image Scanner ADF Home Position

1. If the printed images are not sharp when the scanning is done through the ADF, compare it with the prints made when the scanning is done with the original on the Stage glass.
2. By above comparison, if only the prints made by using the ADF is not clear, use the Memory switch **No.81** to make the correction.
3. Start up Test mode **No.81** and use the PRINT POSITION button ◁ or ▷ on the operation panel to select a desired Memory switch setting number referring to the chart below.
   For instance, if Memory switch setting number **5** needs to be selected, press the PRINT POSITION button to move the number up or down until the display shows **5 81**.
4. **To input the selected Memory switch setting into the machine, press the STOP button and then the ALL RESET button.**
   The panel display returns to an ordinary indication.

[Note]

When the scanning position of the Image scanner is adjusted to just under the White roller of the ADF, the printed image should become sharp.

- Precautions in Adjustment -

- The once-input Memory switch setting cannot be erased even if Test mode No.90 or 97 is activated or when System ROM is replaced.
- The Memory switch setting is erased when **System PCB** is replaced or when Test mode **No.98** is applied.
  In this case all other Memory switch settings will also be erased.

Memory Switch	Adjustment (mm)
9	-1.4
A	-1.2
B	-1.0
C	-0.8
D	-0.6
E	-0.4
F	-0.2
0	0
1	+0.2
2	+0.4
3	+0.6
4	+0.8
5	+1.0
6	+1.2
7	+1.4
8	+1.6

The scanning position moves towards the Original OUT sensor.
(Image scanner moves to the left)

The scanning position moves towards the Original IN sensor.
(Image scanner moves to the right)